

# MANUFACTURING EXTENSION PARTNERSHIP

## Success Stories from the Field

### Stenberg Welding and Fabricating Inc

Minnesota Technology Inc.

#### A Space-Age Solution for Stenberg Welding and Fabricating

##### Client Profile:

Stenberg Welding and Fabricating, Inc., founded in 1978, produces quality metal fabricated products and components, specializing in stainless steel. The company places a strong emphasis on helping customers develop new products and manufacture completed assemblies. Located in Fosston, Minnesota, Stenberg Welding and Fabricating employs 55 people--making it the town's largest employer.

##### Situation:

Stenberg Welding and Fabricating (SWF) manufactures and markets a line of car wash blow dryers with a reputation for being the most powerful and reliable in the industry. SWF's mission is to "be known as a company that puts integrity into the products we produce." Therefore, when customers returned five recently-manufactured fans due to product failure during a two-month period in mid-2001, SWF moved quickly to determine and correct the problem.

The company suspected that the cause of failure could be traced to a recent change in the manufacturing process, but wanted to make sure it didn't miss any contributing factors. SWF asked Minnesota Technology, Inc. (MTI), a NIST MEP network affiliate, to research the cause of its product failure and provide objective feedback.

##### Solution:

MTI contracted with a respected metallurgist, formerly of North Dakota State University, to conduct a metallurgical analysis of the fans. That analysis revealed that two fans failed as a result of impact or misuse and the other three due to a variety of factors, including design, materials, and welding techniques.

To further pinpoint a diagnosis, MTI suggested SWF apply for acceptance to NASA's Michoud Assembly Facility (Michoud) Technology Assistance Program, through which companies can receive limited diagnostic assistance at no cost. MTI helped SWF prepare its application and the company was accepted in the program.

MTI gave the results of SWF's metallurgical analysis to the Michoud facility in New Orleans, Louisiana.

There, a Michoud design and welding expert examined the data and conducted a causation analysis. Michoud's report listed some key elements for SWF to incorporate into the manufacturing process to ensure uniform fan production. Among its findings, Michoud suggested making products more robust by improving material selection and welding processes. It also recommended enhancing product design to protect the fan from external damage. MTI helped SWF evaluate Michoud's recommendations.

##### Results:

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- \* Implemented welding and change-out procedures.
- \* Adopted an enhanced design.
- \* Retained 100 percent of net sales.
- \* Secured reputation for product integrity, thereby improving customer satisfaction.

### **Testimonial:**

"With the assistance of Minnesota Technology, Inc., we were able to analyze and make corrections to our product and process control method in a quick, effective manner. The expert assistance provided by MTI and the NASA lab verified our confidence with our own conclusions and, using the recommendations they provided, we were able to make further improvements in the product structure and performance. MTI's assistance with this issue, as well as their assistance in improving our process control system, has benefited the entire company."

Bill Stenberg, President